

PATENT APPLICATION
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Docket No: Q85504

Heiji WATANABE, et al.

Appln. No.: 10/519,084

Group Art Unit: 2822

Confirmation No.: 7332

Examiner: Tsz K. CHIU

Filed: December 23, 2004

For: SEMICONDUCTOR DEVICE AND ITS MANUFACTURING METHOD

INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. §§ 1.97 and 1.98

MAIL STOP AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure under 37 C.F.R. § 1.56, Applicant hereby notifies the U.S. Patent and Trademark Office of the documents which are listed on the attached PTO/SB/08 A & B (modified) form and/or listed herein and which the Examiner may deem material to patentability of the claims of the above-identified application.

1. H.J. CHO, et al; Novel Nitrogen Profile Engineering for Improved TaN/HfO₂/Si - MOSFET Performance; Microelectronic Research Center; pp.30.2.1-4; Austin, TX (previously submitted and considered)
2. Hyungsuk Jung et al., Electrical and Reliability Characteristics of a n U1trastjom TaOxNy Gate Deielectric Prepared by ND3 Annealing of Ta2O5, IEEE Electron Device Letters, December 2000, Vol. 21, No. 12, pp. 563-565
3. Japanese Patent Application Publication No. 2002-060944, published February 28, 2002 (previously submitted and considered).
4. Japanese Patent Application Publication No. 10-242461, published September 11, 1998 (previously submitted and considered).

5. M. KOYAMA, et al; Thermally Stable Ultra-Thin Nitrogen Incorporated ZrO₂ Gate Dielectric Prepared by Low Temperature Oxidation of ZrN; IEEE Meeting; Dec. 2001; pp. 20.3.1-4;; Washington, DC (previously submitted and considered).
6. Japanese Patent Application Publication No. 2002-164343, published June 7, 2002 (previously submitted and considered).
7. Japanese Patent Application Publication No. 2000-195856, published July 14, 2000.
8. Japanese Patent Application Publication No. 2002-299607, published October 11, 2002, which corresponds to Japanese Patent Application Publication No. 2001-094052 (previously submitted and considered).
9. Japanese Patent Application Publication No. 2005-534163, published November 10, 2005, which corresponds to Japanese Patent Application Publication No. 2003-577313.
10. Japanese Patent Application Publication No. 2003-282873, published October 3, 2003, which corresponds to Japanese Patent Application Publication No. 2002-080316.
11. Japanese Patent Application Publication No. 2003-8005, published January 10, 2003, along with English Language Abstract.
12. Japanese Patent Application Publication No. 2000-3885, published January 7, 2000, along with English Language Abstract.

One copy of each of the listed documents is submitted herewith, except for the following references that have been previously submitted and considered.

The present Information Disclosure Statement is being filed after the later of three months from the application's filing date and the mailing date of the first Office Action on the merits, but before a Final Office Action, Notice of Allowance, or an action that otherwise closes prosecution in the application (whichever is earlier), and therefore Applicant is filing concurrently herewith a Statement Under 37 C.F.R. § 1.97(e). No fee under 37 C.F.R. § 1.17(p) is required.

In compliance with the concise explanation requirement under 37 C.F.R. § 1.98(a)(3) for foreign language documents, Applicant encloses here with a copy of a corresponding Japanese

Office Action dated June 27, 2007, and an English translation of the pertinent portions thereof which cites such documents and indicates the degree of relevance found by the foreign office.

The submission of the listed documents is not intended as an admission that any such document constitutes prior art against the claims of the present application. Applicant does not waive any right to take any action that would be appropriate to antedate or otherwise remove any listed document as a competent reference against the claims of the present application.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Date: September 12, 2007

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STATEMENT UNDER 37 C.F.R. § 1.97(e)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The undersigned hereby states, upon information and belief:

Except as otherwise noted in the Information Disclosure Statement for items cited and considered in an earlier Information Disclosure Statement, that each item of information contained in the Information Disclosure Statement filed concurrently herewith was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of said Information Disclosure Statement.

Respectfully submitted,

/Howard L. Bernstein/

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Substitute for Form 1449 A & B/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT***(use as many sheets as necessary)**Complete if Known*

Application Number	10/519,084
Confirmation Number	7332
Filing Date	December 23, 2004
First Named Inventor	Heiji WATANABE
Art Unit	2822
Examiner Name	Tsz K. CHIU
Attorney Docket Number	Q85504

Sheet	1	of	1
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U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
		Number	Kind Code ² (if known)		
		US			
		US			
		US			
		US			
		US			
		US			
		US			
		US			
		US			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Translation ⁶
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)			
		JP	2000-195856	A	07-14-2000		
		JP	2005-534163	A	11-10-2005		
		JP	2003-282873	A	10-03-2003		
		JP	2003-8005	A	01-10-2003	Matsushita Electric Inc. Co. Ltd	
		JP	2000-3885	A	01-07-2000	Lucent Technology Inc.	

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city, and/or country where published.	Translation ⁶
		Hyungsuk Jung et al., Electrical and Reliability Characteristics of a n U1trastjom TaOxNy Gate Deielectric Prepared by ND3 Annealing of Ta2O5, IEEE Electron Device Letters, December 2000, Vol. 21, No. 12, pp. 563-565	

Examiner Signature

Date Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹Applicant's unique citation designation number (optional). ²See Kind Codes of USPTO Patent Documents at www.uspto.gov, MPEP 901.04 or follow the hyperlink from the title of the document to the intranet. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST. 3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶Applicant is to indicate here if English language Translation is attached.